

Fifteenth Tennessee Water Resources Symposium

Symposium Dates:

April 13-15, 2005

Pre-registration for Symposium:

Before April 8, 2005

Symposium Location and Accommodations:

Montgomery Bell State Park

100 Hotel Avenue

Burns, TN 37029

A block of rooms at the Montgomery Bell Inn and some cabins have been reserved. Inn rooms are \$70, cabins (2 bedrooms) are \$70, and suites are \$180 per night plus tax. When making your reservations, please specify that your room be reserved under "AWRA". For reservations call (615) 797-3101 or (800) 250-8613.

Please reserve lodging by MARCH 13, 2005, to ensure availability and rate.

Directions to park:

For detailed directions to the park, please visit:

*****Special Events*****

Golf Tournament. The tournament is scheduled for 7:30am the morning of April 13. To sign up or for more information, please call Larry Lewis at (615) 896-9022 or email him at larrylewis@taud.org.



Fun Run sponsored by BWSC. A morning jog is scheduled for April 14 at 7am. If you are interested, please call George Garden at (615) 252-4255.

Live Entertainment at both dinners.
TN AWRA Talent



Nominations Sought:

Distinguished Service Award

The Tennessee Chapter of AWRA is seeking nominations for an award to recognize an individual who has made significant contributions to enhance the quality of water resources in Tennessee. Examples of significant contributions include educational contributions towards water resources, scientific advances that improve the understanding of water resources, and several years of dedicated service to the Tennessee Chapter of AWRA. All nominees must be a past or present member of the Tennessee Chapter. Remember, if you attended a conference, you were registered as a member!

The Awards Committee will select one candidate from the nominations and will present the award at the annual business meeting held during the 2005 Symposium. Instructions and nomination forms can be downloaded at <http://tnawra.er.usgs.gov/2005/DistinguishedServiceAwardForm.pdf>

*All nominations must be received by
February 11, 2005.*

Poster Session

In the Mezzanine on Thursday afternoon, the Poster Judges will be judging the Student Posters at 3:30 p.m. Everyone else, please be sure to attend the Poster Session at 5:30 p.m. where about 20 posters will be presented.

To encourage student participation, TN Section AWRA awards one student poster with a certificate and cash. If you are not affiliated with a university or a student poster presenter and would like to be a judge, please send email to Rodney Knight at rrknight@usgs.gov.

For a listing of this year's poster presenters, please visit: <http://tnawra.er.usgs.gov/2005/posters>.

Sponsors & Exhibitors

Opportunities are still available for your organization to be a sponsor or an exhibitor. For more information, contact Lori Crabtree at (615) 837-4720 or visit: <http://tnawra.er.usgs.gov/2005/exhibitor>.

APRIL 13 7:30 a.m. Golf Tournament
 9:30 a.m.-11:00 a.m. Field Techniques Session at the stream near the entrance to the Park
 10:00 am Registration in Exhibit Room

Time	Room A: Keynote Speaker		
1:30pm	Mindy Lalor, National AWRA President Elect, “AWRA and TN AWRA: Partners in Community, Conversation and Connections”		
3:00pm	Coffee Break in Exhibit Room <i>co-sponsored by Stevens Water Monitoring & Barge, Waggoner, Sumner & Cannon, Inc.</i>		
	Session 1A (Room A)	Session 1B (Room B)	Session 1C (Room C)
	Effects of Sedimentation on Ecosystems Moderator: Anne Hoos, USGS	Policies for BMP’s Moderator: David Feldman, UT	Surface Water Quality I Moderator: Tom Lawrence, City of Memphis Stormwater
3:30pm	Turbidity, Transparency, and Habitat in Tennessee Streams. <i>T. Diehl</i>	Improving Potassium Management to Reduce Non Point Phosphorus Losses and Improve Water Quality. <i>F. Walker</i>	Storm Event Water Quality in the Great Smoky Mountains National Park. <i>B. Robinson</i>
4:00pm	Linking Ecological Response with the Dynamics of Fluvial Processes, Habitat Maintenance, and Sediment Characteristics: A Framework for Sediment TMDL Development. <i>J. Schwartz</i>	Metropolitan Nashville & Davidson County’s MS4 Erosion Prevention and Sediment Control (EPSC) Grading Permit (GP) Program. <i>M. Hunt</i>	Facilitated Transport of Triclosan in the Receiving Environment of an Onsite Wastewater Treatment System: Cause for Aquatic Concern. <i>A. Roach</i>
4:30pm	Developing Links between Aquatic-Community Structure & Sediment-Related Variables: Preliminary Results from the Ridge and Valley. <i>J. Owens</i>	The Use of Best Management Practices (BMPs) during Forest Harvesting in Tennessee: A Statewide Evaluation. <i>W. Clatterbuck</i>	Development of a Transducer Network in an Urban Environment. <i>J. Anderson</i>
5-6pm	Vendor Equipment Demonstration Session at the dock outside behind the restaurant.		
6-8pm	Dinner and Live Entertainment in Room A		

APRIL 14 7:00 am Fun Run *sponsored by Barge Waggoner Sumner & Cannon, Inc.*
 7:30 am Coffee and biscuits in Exhibit Room *sponsored by the Ground Water Institute, The University of Memphis*
 8:00 am Registration in Exhibit Room

Time	Session 2A (Room A)	Session 2B (Room B)	Session 2C (Room C)
	Sediment Transport Moderator: Andrew Simon, USDA Agricultural Research Svc	Ground-Water Quality & Contamination Moderator: Garland Wiggins, TDEC	Source Water Moderator: Robin Cathcart-Mudd, TDEC
8:30am	Changing Sediment Dynamics in an Adjusting Watershed. <i>L. Boulton</i>	Controversy over Disposal of Contaminated Soil in a Sinkhole South of Knoxville, Tennessee: Environmental Interpretations, Appropriate Application of Dye Tracing, and Political Ramifications. <i>W. Zhou</i>	Source Water and Regional Ground-Water Flow. <i>M. Bradley</i>
9:00am	Modeling of Sediment Delivery and Channel Transport Processes: Case Study Comparison between an Urban and Non-Urban Subwatershed. <i>B. Thames</i>	Temporal Variability of Agricultural Chemicals in Ground Water and Implications for Water-Quality Sampling. <i>A. Choquette</i>	Consider the Source: Protecting Tennessee’s Public Water Supplies (video). <i>T. Moss</i>
9:30am	The Ten Commandments of Sediment Transport. <i>G. Moody</i>	Hydrologic Assessment of Leakage from Nonconnah Creek to the Shallow Aquifer in the Vicinity of the Sheahan Well Field, Memphis, Tennessee. <i>D. Larsen; J. Morat</i>	Reclamation Projects in Scott County, Tennessee. <i>J. Lay</i>
10:00am	Coffee Break in Exhibit Room <i>sponsored by S&ME, Inc.</i>		
10:30am	Geomorphologic Investigations Moderator: Lensyl Urbano, The University of Memphis	Bacterial Source Tracking Moderator: Michael Hunt, Nashville Metro Water Services	Public Education & Awareness Moderator: Tim Gangaware, UT
	Micromodeling: A Loose-Bed Study of the Loosahatchie-Memphis Reach of the Mississippi River. <i>R. Gaines</i>	Use of Flow Duration Curves and Load Duration Curves to Enhance Fecal Bacterial Source Tracking in Stoners Creek, Davidson County, Tennessee. <i>F. Bailey</i>	Protecting the Source: Tennessee’s Drinking Water (video). <i>T. Moss</i>
11:00am	Environmental Restoration: A Micromodel Study. <i>D. Max</i>	Comparison of Antibiotic Resistance Patterns, Carbon Utilization Profiles, and Pulse-Field Electrophoresis of <i>Escherichia Coli</i> for Fecal Bacteria Source Tracking in the Duck River, Middle Tennessee. <i>J. Farmer</i>	An Assessment of the Need for Non-Point Source Pollution Education near Streams Flowing through Developed Areas within the Stones River Watershed, Tennessee. <i>M. Abolins</i>
11:30am	Changes in Sediment and Nutrient Fluxes from Hillslopes in Response to Anthropogenically Disturbed Channels. <i>S. Mudd</i>	Monitoring of Enterovirus and Hepatitis A Virus in Wells and Springs in East Tennessee. <i>T. Baldwin; A. Layton</i>	The Hazards of Low-Head Dams: (How) Can We Make Them Safer? <i>B. Tschantz</i>
Noon	Lunch with Luncheon Speaker Albert Ogden, MTSU “The World of Caves, Cavers, and Caving”		

April 14 <i>(cont)</i> Time	Session 2A (Room A)	Session 2B (Room B)	Session 2C (Room C)
	Water Quality in Urban Environments Moderator: Bill Hamilton, Vanderbilt University	Streamflow Assessments Moderator: Rodney Knight, USGS	Trends in Storm Water Management Moderator: Robert Karesh, Williamson County
1:30pm	Backtracking in Urban Waterways Using Coordinated Bacteria Tracking Assessment Methods Simultaneously. <i>T. Lawrence</i>	Flood Frequency Prediction Applications for Tennessee Using Traditional and Newer Methods. <i>A. Hangul</i>	Franklin Tennessee Stormwater Program: Protecting Quality of Life. <i>D. Green</i>
2:00pm	Bacterial Water Quality during a Wet Weather Event. <i>B. Hamilton</i>	Methods for Estimating Flow Duration and Low Flow Frequency Characteristics of Unregulated Streams of Tennessee. <i>G. Law</i>	Slater Mill Creek – Solving Local Problems; Developing a County-Wide Plan. <i>D. Briglio</i>
2:30pm	Metro Nashville & Davidson County Aerial Infrared Sewer and Storm Water Line Inspection, 2004. <i>S. Winesett; M. Hunt</i>	Linking Stream Habitat Assessment Scores with Stream Morphology for Creating Sediment TMDLs. <i>N. Jokay</i>	The Alchemy of Stream Restoration: Impaired Stream to a Thing of Beauty Year Three The Nature Conservancy’s Big Rock Creek Project. <i>L. Colley</i>
3:00pm	Coffee Break in Exhibit Room <i>sponsored by UT, WRRRC</i>		
3:30pm	Surface Water Quality II Moderator: Scott Gain, USGS	Dye Tracing Moderator: Scotty Sorrells, TDEC	Storm-Water & Waste-Water Treatment Moderator: Tom Allen, Neel-Schaffer, Inc.
	Tier Evaluation For Implementation of Tennessee’s Antidegradation Policy. <i>G. Denton</i>	Elizabethton’s Big Spring: A Case for Karst Aquifer Protection. <i>R. Benfield</i>	Evaluation of Peat Moss as a Filter for the Removal of the Herbicide, Simazine. <i>K. Stearman</i>
4:00pm	Evaluation of the SPARROW Model for Estimating Transport of Nitrogen and Phosphorus in Streams of the Interior Plateau Ecoregion, Tennessee, Kentucky, and Alabama, 1992-2002. <i>A. Hoos</i>	The Dissolution of a Conceptual Model: The Karst Hydrogeology of U.S. DOE Oak Ridge Reservation. <i>D. Gilmore</i>	Case Studies in Effluent Toxicity Treatability. <i>S. Hall</i>
4:30pm	Treating Stormwater Runoff from a Travel Plaza: A Case Study. <i>J. Ricketts</i>	Ground Water Tracing Results and Sinkhole Analysis in La Vergne, Tennessee, for Interpreting and Remediating Sinkhole Flooding Problems. <i>A. Ogden</i>	Storm Water Detention Basin Retrofit. <i>C. Neel</i>
3:30pm	Judges will evaluate student posters in the Mezzanine. Student Poster Presenters will be available to discuss and answer questions about their displayed posters with the judges.		
5:30pm	Poster Session in the Mezzanine: All Poster Presenters will be available to discuss and to answer questions about their displayed posters.		
6-8pm	Dinner <i>co-sponsored by Tetra Tech, Inc. followed by TN AWRA Business Meeting and</i> 🎶 🎶 Talent Show 🎶 🎶		

APRIL 15 7:30 am Coffee & biscuits in the Exhibit Room

Time	Session 3A (Room A)	Session 3B (Room B)	Session 3C (Room C)
	Surface Water Quality III Moderator: Paul Davis, TDEC	Field Investigations-Restoration Moderator: Dan Eagar, TDEC	GIS Mapping & Databases Moderator: Carol Harden, UT
8:30am	Trend Analysis of Various Water-Quality Parameters for the Mississippi, Cumberland, and Tennessee River Basins in the State of Tennessee. <i>R. James</i>	Quantifying Streambank Stabilization Using Common Riparian Species and a Deterministic Bank-Stability Model. <i>A. Simon</i>	Internet Tool Assisting Comprehensive Nutrient Management Planning in Tennessee. <i>B. Jolly</i>
9:00am	Point Source Impacts on the Loosahatchie River. <i>L. Moore</i>	Thoughts on Stream Restoration and Mitigation in the Interior Low Plateaus Province of Kentucky and Tennessee. <i>M. Lighthiser</i>	Application of Information Technology to Study Karst Features at Local and Regional Scales. <i>Y. Gao</i>
9:30am	Design Considerations for Open Channel Sections. <i>P. Paily</i>	Success and Failures in BMP Implementation, River Restoration Project of the Tennessee Scenic Rivers Association and the Harpeth River Watershed Association. <i>J. McFadden</i>	A Role for Geospatial Information Systems in Identifying Potential Water Quality Trading Markets in Tennessee. <i>D. Roberts</i>
10:00am	Coffee Break in Exhibit Room		
10:30am	Tennessee Water Programs Moderator: <i>TBA</i>	Field Investigations-Remediation Moderator: George Garden, BWSC	Watershed Investigations Moderator: Brooks Jolly, UT
	Water Pollution Control Update. <i>S. Qualls</i>	Precipitation Infiltration and its Affect on Groundwater Recharge in a Soil/Carbonate Bedrock Aquifer. <i>J. Boyd</i>	Estimating Agricultural Water Use in a Watershed. <i>B. Britton</i>
11:00am	Water-Science Planning: Issues and Initiatives for the U.S. Geological Survey in Tennessee. <i>S. Gain</i>	A Streamlined Approach: Impacts of Early Actions on the Ecological Risks at the Copper Basin Mining District Site. <i>G. Wyatt</i>	Watershed Characteristics in Karst Area. <i>P. Li</i>
11:30am	The Quest for Measurable Water Quality Improvements: An Overview of Tennessee’s Nonpoint Source Program. <i>J. McClurkan</i>	Natural Channel Design for a Stream Realignment Incorporating Flood Insurance Program Requirements. <i>K. Barry</i>	Fact or Fiction: THe Truth about Water Contamination in Manchester and Tullahoma, TN. <i>K. Bitting</i>

Montgomery Bell State Park
Burns, Tennessee
April 13-15, 2005

Sponsored by

Tennessee Section of the American Water Resources Association

In cooperation with (Organizing Committee)

- * Barge Waggoner Sumner & Cannon, Inc.
- * Brown & Caldwell
- * Ground Water Institute, The University of Memphis
- * Neel-Schaffer, Inc.
- * Tennessee Association of Utility Districts
- * Tennessee Department of Environment and Conservation
- * Tennessee Technological University
- * University of Tennessee
- * U.S. Army Corps of Engineers, Nashville
- * U.S. Geological Survey, Water Resources
- * Vanderbilt University

Also sponsored by

- Barge Waggoner Sumner & Cannon, Inc.
- Center for the Mgmt, Utilization & Protection of Water Resources
- Ground Water Institute The University of Memphis
- Neel-Schaffer, Inc.
- Tetra Tech, Inc.

Exhibitors

- AMJ/YSI
- Biohabitats
- Hydrolab-OTT
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- Jen-Hill Construction
- P.E. LaMoreaux & Assoc.
- Shamrock Corporation
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- U.S. Geological Survey
- Vaisala

**Companies both
Sponsoring and Exhibiting**

- S&ME
- Stevens Water Monitoring
- UT, TN Water Resources Research Center
- WaterWorks! Program, MTSU

Symposium Chair

Brian Waldron
Ground Water Institute, The University of Memphis
Email: bwaldron@memphis.edu
Tel: (901) 678-3913

Fifteenth Tennessee Water Resources Symposium



April 13-15, 2005
Montgomery Bell
State Park
Burns, TN

KEYNOTE SPEAKER:

Mindy Lalor,
National AWRA President
**“AWRA and TN AWRA: Partners
in Community, Conversation and
Connections”**

LUNCHEON SPEAKER:

Albert Ogden, MTSU
**“The World of Caves, Cavers, and
Caving”**



Registration and Preliminary Agenda
(ATTN Engineers: Opportunity for PDH's/CEU's)

Address service requested

Tennessee Section AWRA
c/o U.S. Geological Survey, WRD
640 Grassmere Park, Suite 100
Nashville, TN 37211

<http://tnawra.er.usgs.gov>

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Fifteenth Tennessee Water Resources Symposium Pre-Registration Form

Title _____ Mr., Ms., Dr. (circle one)
 Name _____
 Title _____
 Organization _____
 Address _____
 City, State, Zip _____
 Daytime Phone _____
 Email Address _____

Please check if you are interested in attending one of the new special outdoor sessions.

Space is limited, so reserve your spot early! (see back of this page for more info)

☐ Field Techniques Session ☐ Vendor Equipment Demo Session

Type of Registration	Cost per person	Number of registrants	Subtotal
Regular Registration	\$100		
Speaker	\$100		
Professional Poster Presenter	\$100		
Moderator	\$100		
Sub Total			
Discount 10% (if more than 10 \$100 registrations)			
Student Registration*	\$30		
Student Poster Registration*	\$30		
Extra Meals for spouses	\$12		
Grand Total			

Send Registration to:
 TN AWRA
 c/o U.S. Geological Survey
 640 Grassmere Park, #100
 Nashville, TN 37211
 ATTN: Lori R. Crabtree
 Phone: (615) 837-4720
 FAX: (615) 837-4799
 Email: crabtree@usgs.gov

*Student sponsorships are available again this year. If you'd like to be considered for sponsorship, please email Lori Crabtree at crabtree@usgs.gov

Please circle one: Visa Mastercard (not recommended to email)

Credit Card # _____ Exp. _____

Signature _____

Please print name on card (if different from above): _____

Pre-registration fee is \$100 until April 8, 2005; onsite registration fee is \$120. Student registration is \$30. A 10% discount applies if 10 or more people register from one organization (student registrations are already discounted). Make check payable to "Tennessee AWRA" or "TNAWRA." Visa and Mastercard are also accepted. The registration fee covers the costs for each registrant's copy of the summary of abstracts and the costs for Thursday's lunch, both dinners, coffee breaks, and 2005-6 membership fees. Additional meals may be purchased for spouses for \$12 each.

Additional registrants if at the same address. If addresses differ or if more space is needed, please use a separate piece of paper.

2. Name: _____

Email: _____

Phone: _____

☐ Field Techniques Session

☐ Vendor Equipment Demo

3. Name: _____

Email: _____

Phone: _____

☐ Field Techniques Session

☐ Vendor Equipment Demo

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Phone: _____

☐ Field Techniques Session

☐ Vendor Equipment Demo

7. Name: _____

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Phone: _____

☐ Field Techniques Session

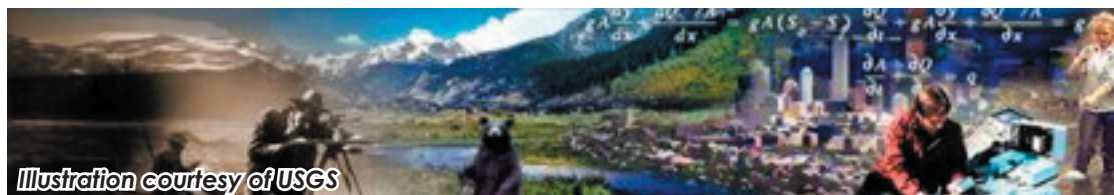
☐ Vendor Equipment Demo

New

Special Outdoor Sessions

(weather permitting)

New



Field Techniques Session

When: April 13, 2005 at 9:30-11:00 a.m.

Where: Stream at the Main (north) Entrance of the Park
(off Hwy 70)

Thirty minute rotating demonstrations will include:

1. **In-stream rapid bioassessment** method for flowing, wadable streams (TDEC);
2. **Visual stream and riparian ecosystem assessment** methodology (NRCS)
3. Use of the **acoustic Doppler flow-velocity meter** and experimental applications for estimating turbidity and suspended sediment (USGS); and
4. Use of **global positioning systems** and linkages for GIS applications (GWI).

Contact Anne Choquette at (615) 837-4774 or achocq@usgs.gov for more information. Be sure to sign up on your registration form if you are planning to attend this special session.

Vendor Equipment Demonstration Session

When: April 13, 2005 at 5:00-6:00 p.m.

Where: Boat dock outside behind restaurant

Vendors will be signing up soon to demonstrate their equipment in the field. Check the following website for vendor information: <http://tnawra.er.usgs.gov/2005/equip-demo.html>

Contact Kim Waltenbaugh at (615) 837-4782 or kawalten@usgs.gov for more information. Be sure to sign up on your registration form if you are planning to attend this special session.